

Survey Unit	Reviewer	Box Plots	Q-Q Plots	Rounds of excavation
TU067	JD, DG	<p>RAS results for all rads do not have any variability and are from a different population than all other surveys/samples so they look suspicious.</p> <p>K-40 FSS results very low variability, low concentrations, and indicate a different population</p>	K-40 in FSS possibly from a different populaion	3
TU068	JD, DG	<p>FSS results have very low variability compared to other surveys, especially for K-40, DG K-40 variability changes bewtween sampling events</p>	K-40 in FSS possibly from a different populaion	3

Gamma scan or static concerns	On vs offsite lab	Time Series	Name suspect (1=yes, 0=no)
<p>1 - Sampler name, off-site sample mass and COC forms for samples missing from reports.</p> <p>2 -Static survey not signed by RSO in SUPR</p> <p>3 - Raw scan data not in SUPR</p> <p>4 - Scan and static data do not appear to be consistent: scan data highest result was 4,843 cpm; static data ranged from 2,530-6,240 cpm</p> <p>Scan data appears to fall within the expected variability (2.608 - 7,560 cpm)</p>			1
<p>1 - Sampler name, off-site sample mass and COC forms for samples missing from reports.</p> <p>2 -Static survey not signed by RSO in SUPR</p> <p>3 - Raw scan data not in SUPR</p> <p>Scan data appears to fall within the expected variability (2,608 - 7,560 cpm)</p>			0

Name	Signs of falsifying (1=Yes, 0=no)
	1
R Roberson	
	1

Signs of falsification summary

1 -RAS results look faked due to very low variability

2 - Review form indicates allegations associated with this TU:

Former Worker Allegation:

RSY-2 laborers missing the required number of samples. Taylor told them to go get a sample "from anywhere." They went behind the Conex to another pad and got an unrelated "false" sample. Allen and Reggie

3 - missing COCs and raw scan data in reports

JD 1 -RAS results look faked due to very low variability

2 - SUPRs missing COCs, RSO signatures, sampler names, and raw scan data in reports

3 - Multiple excavations, adjacent to TU067 where worker allegations specify excavated soil was not scanned properly in RSY2 DG Population of K-40 on is much more variable on 9/19/07 then the remaining 10 events. From 9/19/07 to 9/20/07 variability drops.

Failure to follow workplan (1=Y, 0=N)	Signs of failure to follow workplan	Overall score (0 to 2)
	Missing data and info in SUPRs	1
		1

Comments - Other	Followup needed, e.g. questions for Navy	Recommend for PCA (1 or 0)
<p>This survey unit is suspect for the following reasons:</p> <ul style="list-style-type: none"> 1 - Former worker allegations regarding screening of soil from this trench unit at the RSY2. This indicates a high potential that FSS results could also have been falsified 2 - RAS results do not have normal variability - highly suspect for falsification 3 - K-40 FSS results look like they are from a different popultaion than other surveys 4 - COCs and names of samplers missing in SUPR 5 - No RSO signatures on survey results 6 - Raw scan data missing from SUPR <p>Recommend for re-sampling</p>		<p>JD 1, DG 0</p>
<p>This survey unit is suspect for the following reasons:</p> <ul style="list-style-type: none"> 1 - Variability in sample results for FSS low - suspect for falsification 2 - K-40 FSS results look like they are from a different popultaion than other surveys 3 - COCs and names of samplers missing in SUPR 4 - No RSO signatures on survey results 5 - Raw scan data missing from SUPR <p>Recommend for re-sampling</p>		<p>1</p>

Grey area - talk to group	Scoring ranking	
yes	4.5	
Yes	5.4	

TU069	JD, DG	<p>RAS results for all radionuclides have low variability and for Ac-228 and Bi-214, indicate RAS results are from a different population than all other surveys/samples so they look suspicious.</p> <p>K-40 FSS results very low variability, low concentrations, and indicate a different population, DG K-40 variability changes between sampling events</p>	K-40 in FSS from a different populaion	3
TU071	DG, DK; JD	RAS samples show different population for Bi-214.		
TU072	DK; KB; JD	No anomalies noted	No anomalies	3
TU073	DK; JD	No anomalies noted	No anomalies, K-40 slope slightly different in SYS_1 but this is due to one or more low results in this set of data.	3
TU074	JD	No comparisons made - only one set of FSS data collected. Data are highly variable	No comparisons made - only one set of FSS data collected	0
TU075				
TU076				
TU078				
TU079				
TU080				

<p>1 - Sampler name, off-site sample mass and COC forms for samples missing from reports.</p> <p>2 -Static survey not signed by RSO in SUPR</p> <p>3 - Raw scan data not in SUPR</p> <p>4 - Scan and static data inconsistent: highest count for statics was 4,676 cpm; scan data ranged from 3,220 - 6,200 cpm</p>			1
			0
<p>The Data Eval Form states the static data (highest count was 4,279 cpm) are inconsistent with the scan results (3,890-6,720 cpm)</p> <p>COCs not provided in SUPR</p>			1
<p>Scan data (highest count was 4,673 cpm) and Static data (4,240 - 8,750) are not consistent.</p> <p>RSO signature and date missing from survey data, sampler not identified in SUPR</p>			0
<p>Scan and static data are inconsistent. Static results ranged from 4,300 - 5,800 cpm; scan ranged from 1,630 - 6,750 cpm.</p> <p>Scan data performed after FSS sample collection.</p>			0

	1
A Jahr	
	1
R Roberson	
	1

<p>1 - RAS results for all radionuclides have low variability and for Ac-228 and Bi-214, indicate RAS results are from a different population than all other surveys/samples</p> <p>2 - SUPRs missing COCs, RSO signatures, sampler names, and raw scan data in reports</p> <p>3 - Multiple excavations, near to TU067 where worker allegations specify excavated soil was not scanned properly in RSY2, DG K-40 more variable on 9/19/07 and 10/17/07 than other sampling events.</p>
<p>1 - Inconsistent scan and static data; highest count for static survey was 4,279 cpm where scans ranged from 3,890 - 6,720</p>
<p>1 - Scan and Static data inconsistency</p> <p>2 - RSO signature on scan and static data results is missing</p>

		1
		1
0		1
		0

<p>This survey unit is suspect for the following reasons:</p> <p>1 - RAS results do not have normal variability and are from different popultaiton than other surveys for Ac-228 and Bi-214 - highly suspect for falsification</p> <p>2 - K-40 FSS results look like they are from a different popultaion than other surveys</p> <p>3 - COCs and names of samplers missing in SUPR</p> <p>4 - No RSO signatures on survey results</p> <p>5 - Raw scan data missing from SUPR</p> <p>Recommend for re-sampling</p>		1
Remediation performed due to Cs-137. Recommend resample to confirm ROC concentrations for Ra-226 and Cs-137		1
<p>QC Dup is outlier from population; Karla thought it was ok.</p> <p>1 - Scan and Static data are inconsistent</p> <p>2 - SUPRs do not contain COCs for samples collected.</p> <p>Recommend resample to confirm ROC concentrations</p>		
<p>1 - TU is downstream from Building 274 used for decontamination training and offices, Building 322 used by NRDL for development of radiation detection instrumentation (no contamination found and building demolished), and Buildings 313, 313A used by NRDL for Instrumentaiton laboratory and as stockroom and storage areas.</p> <p>Cs-137 was found above the action level in 2002; but no evidence of residual radioactivity above the release criteria was found in 2014.</p>		

	5.4	
	8.2	
	7.2	10
Review with group	6.6	13
	5.8	
	5	

TU082				
TU083				
TU085				
TU085	DG,DK,KB	Box Plots show concern, K-40,B-214 FSS are from different populations. Box plot Ac-228. RAS appeared to show greater variability and activity than the other sets. The biased samples appear to represent a less diverse and lower activity population compared to the others. The biased samples should have been collected at the hot spots. Bi-214 shows similar. Same for K-40 . Ac-228, Bi-214	Q-Q plots - slope breaks show sometimes flatter, sometimes steeper, could mean different populations	
TU086	DK			
TU087				
TU088				
TU089				
TU091				
TU092				
TU093				
TU096				
TU097				
TU097	DK	Bias has high variability vs other data.		
TU098				
TU098	DK, KB	K-40 - mean for Final is highest and less variable. Seems odd that FSS would have a different mean from the others, but Ac-228 similar means so might be ok.		
TU099				
TU099	DK			

Recommend Resample to confirm ROC concentrations/ chemicals		1
Navy says to Resample already		
Soil under Bldg 351A,; K-40 FAA different population. Recommend Resample to confirm ROC concentrations		
Recommend resample to confirm ROC concentrations		
Cs-137 remediation,Highest Cs-137 concentration recorded in Parcel G, Resample to confirm ROC concentrations		

TU100				
TU101	DK			
TU101				
TU102	DK			
TU102				
TU103	DK			
TU103				
TU104				
TU106				
TU107	DK			
TU107				
TU108				
TU111				
TU115	DK			
TU115				
TU116	KB, DK		Different slope in line on final. One way falsification caught in 2012 was K-40 for FSSR not the same as original. Slope for Ac-228 looks like 2 different populations in biased samples.	
TU116				
TU117				
TU118				
TU119				
TU121				
TU124				
TU151				
TU204	DG ; DK	Box Plots show concern		
TU204				

Scan data elevated compared to sample data/several samples may have been substituted,			
Gamma Scan data >3sigma;			
Scan measurements above investigation threshold inconsistent w/ FSS samples, samples could have been taken in areas with lower count rate in trench.			

[illegible]

		1
		0
		1
		1

Cs-137 remediation,		
Cs-137 remediation, K-40 may be from diff pop, Recommend Resample to confirm ROC concentrations		
Resample to confirm ROC concentrations		
samples may have been collected somewhere else within the trench, Resample to confirm ROC concentrations		
Cs-137 remediation, but looks ok		
Close to impacted area, had a lot of remediation, Difficult to excavate more.		
where is form		1

	6
	7
	14
	9
	2
	1
	8

	Survey Unit	Reviewer	Box Plots	Q-Q Plots
Building				
	Bldg 24	TJ	K-40 biased concentrations low, systematic were high. Biased results do show anomalies, contrary to form conclusions, elevated ratings, suspicious potassium variation, only one round of sampling.	
	Bldg 27	TJ		
	Bldg 30	TJ		
Parcel G Bldg SUs recommended for NFA				
Building	SU			
364	SU 20			
364	SU 22			
364	SU 23			
364	SU 24			
364	SU 25			
364	SU 26			
364	SU 27			

Rounds of excavation	Gamma scan or static concerns	On vs offsite lab	Time Series	Signs of falsifying (1=Yes, 0=no)
				0
				0

Signs of falsification summary	Failure to follow workplan (1=Y, 0=N)	Signs of failure to follow workplan	Overall score (0 to 2)
			2
			2

Comments - Other	Followup needed, e.g. questions for Navy	Recommend for PCA (1=Y, 0=N)
Peanut spill area, Form said "no remedial action" and also "peanut spill excavation." Needed to scan entire surface area	Request Cs box plots, Note Christina will do, still waiting for it	
Site off spill, significant spills, time series failed, 2-6 months later delay, missing scan data from the FSSR		
K-40 on avg higher than other bldgs Parcel G		

Grey area - talk to group	Scoring ranking